Bud Irish

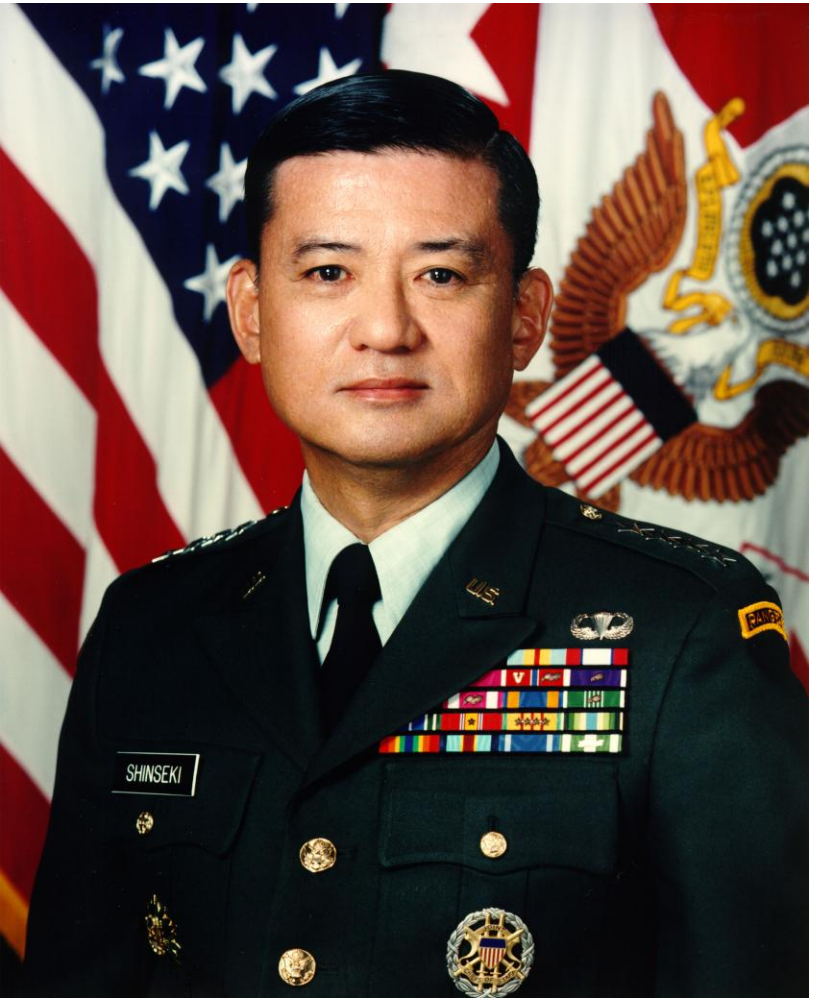
Bud Irish graduated from the University of Southern Mississippi in 1976 was commissioned in Armor and served 26 years. He has served in a variety of armor and acquisition positions and is currently working for SAIC as part of the Boeing/SAIC Lead System Integrator team on the Future Combat Systems Program. He is the Deputy for the Lethality and Soldier Systems teams.

NDIA
LSI

24 June 2003

CSA Statement of the Problem

FUTURE COMBAT SYSTEMS
FCS
One Team – The Army/DARPA/Industry

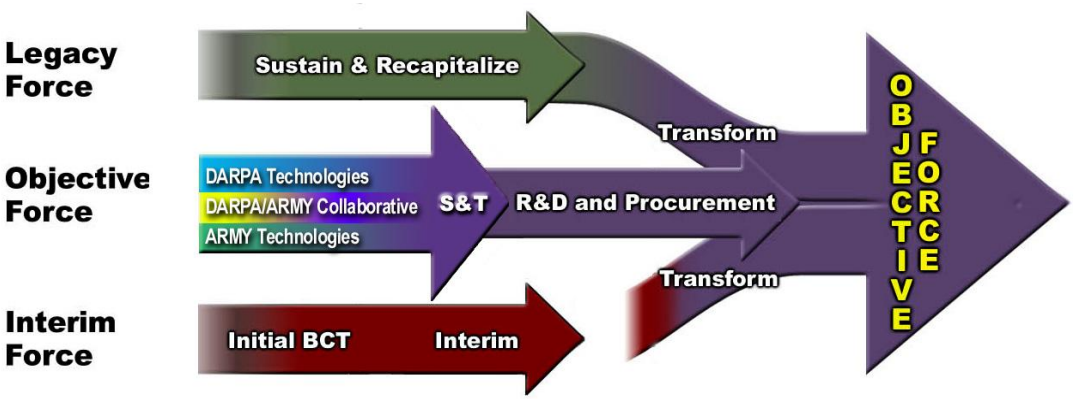


"We must provide early entry forces that can operate jointly, without access to fixed forward bases, but we still need the power to slug it out and win decisively.

Today, our heavy forces are too heavy and our light forces lack staying power.

We will address those mismatches."

-- GEN Shinseki, CSA, 23 June 1999



. . . Responsive, Deployable, Agile, Versatile, Lethal, Survivable, Sustainable.

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FCS Operational Requirements

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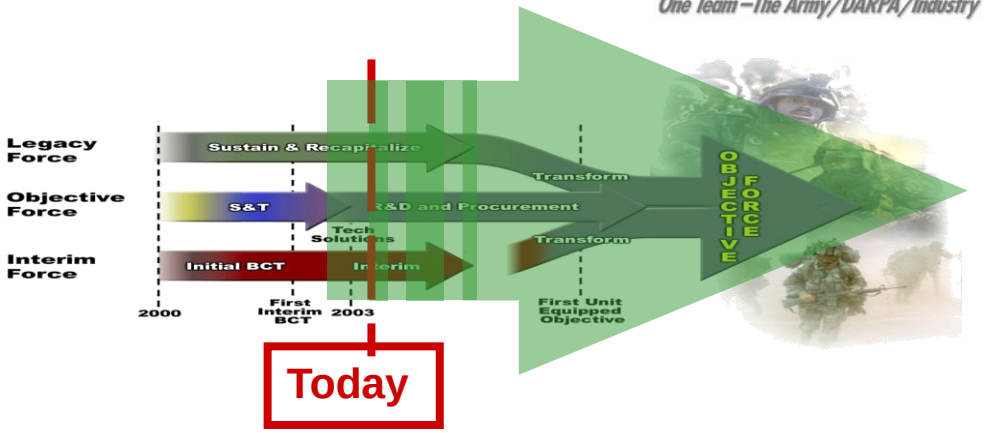
Develop an Integrated System-of-Systems Full Spectrum Force



- **Interoperability with Joint / Coalition Forces**
- **Optimal set of Net-centric Combat Capabilities**
- **Manned and Unmanned Family of Systems**
- **Strategically Deploy in a C-130 "Like" Aircraft**
- **Roll off in a "Ready to Fight" Configuration**
- **Brigade in 96 Hours**
- **Significantly Reduce the Logistics Footprint**

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Magnitude of the Task

FUTURE COMBAT SYSTEMS
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- **Significant Government Investment**
- **Impacts Every Unit and Soldier in the Army**
- **Shapes Government / Commercial Industrial and Sustainment Base**
- **Schedule Constrained and Technology Driven**

Requires Innovation and Leadership

First True System-of-Systems Development, Production and Fielding

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What the LSI Does/Does Not Do…

FUTURE COMBAT SYSTEMS
FCS
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- **Why a Lead Systems Integrator (LSI)…**
  - **The Army's first large scale "system of systems" development, integration across many platforms and disciplines, requires a robust / dedicated organization experienced in large scale systems integration to be successful**
- **What the LSI does…**
  - **Trusted Industry member of the FCS Team (DARPA / ARMY / LSI / Best of Industry) that has total systems integration responsibility ("top down" development)**
  - **Provides the Team a "general contractor" for resource allocation, subcontract implementation and coordination, and programmatic responsibilities**
  - **Provides the vital link to the "Best of Industry" including domestic / foreign contractors, Government programs / Labs, and educational institutions**
- **What the LSI does not…**
  - **Does NOT provide hardware solutions to subsystem / element requirements**

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Lead Systems Integrator

FUTURE COMBAT SYSTEMS
FCS
One Team – The Army/DARPA/Industry

Industry role as FCS Lead Systems Integrator (LSI)…
Leader clearly defined … NOT a Consortium!

- **System of Systems Integrator… total systems integration responsibility**
  - **Integral partner on the DARPA/Army Team**
  - **Assists in the development of Operational, Systems and Technical Architectures…links to the Objective Force**
  - **Leverages applicable Government and Commercial activities and resources**
  - **Performs the identification, selection and procurement of major systems/sub-systems**
  - **Provides direct support to TRADOC, assists requirements development and analysis activities**

Industry Management / Government Oversight

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Key Aspects of FCS Program

FUTURE COMBAT SYSTEMS
FCS
One Team – The Army/DARPA/Industry

- **Rapid fielding of FCS equipped Unit of Action with an affordable and optimum set of net-centric combat capabilities.**
- **Development of an Integrated System of Systems consisting of Full Spectrum capabilities including:**
  - **Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) - designed as a system and embedded in the combat platforms**
  - **Combat platforms, ground and air -- with much lower sustainment needs and life cycle costs**
  - **Sustainment meshed with operational needs**
    - **Embedded prognostics for soldiers and platforms**
    - **Anticipatory logistics fully supported by C4ISR and platform designs**
  - **Training for individuals and units**
    - **Embedded and external**
    - **Fully supported by the C4ISR and platform design**

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Key Tenets of the Program

FUTURE COMBAT SYSTEMS
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- Create Opportunity for Best of Industry to Participate
- Leverage Government Technology Base to Maximum Extent
- Associate On-Going Enabling Efforts With LSI-Led Activity
- Collaborative Environment from Design Through Life Cycle
- As a Minimum, Commonality at Subsystem/Component Level
- Design/Plan for Technology Integration and Insertion
- Maintain and Shape Industrial Base for the Future
- Retain Competition Throughout Objective Force Acquisition
- Appropriate Government Involvement in Procurement Processes
- Maintain and Shape Government Acquisition Community
- Program Affordability--Balance Performance and Sustainment

FCS is a System of Systems, Not Individual Pieces

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Partnering With Suppliers

FUTURE COMBAT SYSTEMS
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- Modeled after Government BAA process
  - Solicits global participation
- Solicits Industry, Government and Academia for:
  - Best of Industry solutions and capability
  - Competitive proposals
  - Creative approaches
- Two Broad Industry Announcements (BIA) each with different focus
  - BIA #1: Technology, Trades and Demonstrations (44 BIAs)
  - BIA #2: Architecture and Specification Development (31 BIAs)
- BIA #1 - 147 proposals awarded to 63 suppliers
- BIA #2 - 68 proposals awarded to 41 suppliers
- Extension of demonstrations and other services resulted in 52 additional awards

Global Solutions for FCS Requirements

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FCS Increment I Baseline

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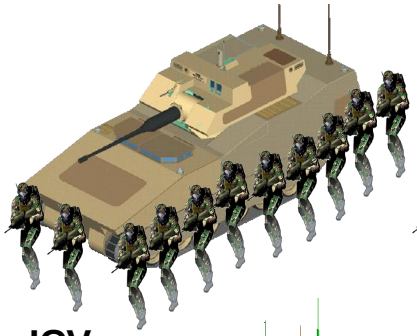
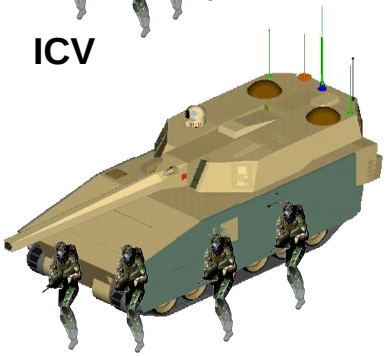
Manned Systems



ICV

C2V



Mounted Combat System

Reconnaissance and Surveillance

NLOS Cannon

NLOS Mortar

Unmanned Aerial System

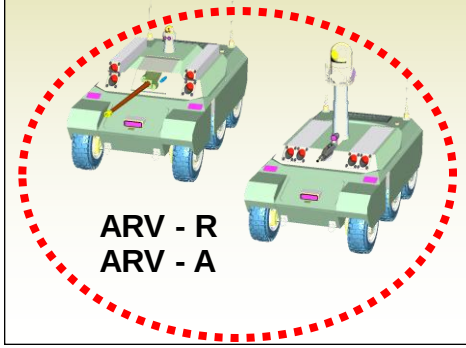
~~Class II~~
Class I

Class III

Class IV

Combine

Unmanned Ground Vehicles



ARV - R
ARV - A

Small Manpackable

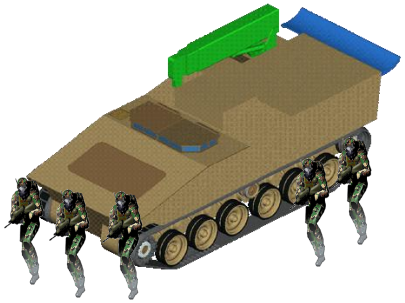
MULE Transporter

Unattended Ground Sensors

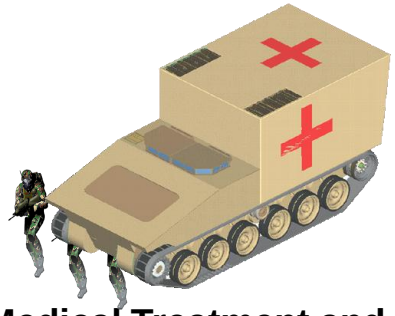
Unattended Munitions
-NLOS LS

-Intelligent Munitions

NETWORK



~~FCS Maintenance and Recovery Vehicle~~
ILO - HEMTT



Medical Treatment and Evacuation

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2002	2003	2004	2005	2006	2007	2008	2009	2010
CTD Award	MS B							IOC

Concept And Technology Demos

System Development And Demonstration

Low Rate Initial Production

Increment I Spiral and Increment II CTD

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FCS LSI Organization

FUTURE COMBAT SYSTEMS
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Program Manager – LSI
*Dennis Muilenburg**

Deputy Program Manager
*John Gully**

Executive Support

One Team Council
(PM of Major Teammates)

Advanced Programs
*Roy Minson**

Independent Reviews & Risk Management - *Frank De Mattia**

Supplier Management
*Steve Marion**

Chief Scientist & Architect*
Ed Brady

Business Management
*Jeff Worley**

Software & Distributed Systems
Rich Collins (acting)*

System-of-Systems' Integration
*Lee Wilbur**

System-of-Systems' Integration

Advanced Collaborative Environment
Rich Crispo

System-of-Systems Eng. & Integration
Jim Anderson

Integrated Simulation & Test
Peter Cherry

Complementary Programs
Brad Cohen

Logistics Systems
Pat Bennett

Training Systems
Jim Shiflett

Force Development
Jack Schmitt

Business, Technical & Programmatic Integration

Administration/PMO*
Ralph Moslener

Chief Engineer*
Rich Collins

Communications
Felicia Campbell

Human Resources
Jim Caesar

IDS & PW Integration
Allen Davis

Legal
Ron Fouse

LRIP & Production Plng
Courtney Weiss

Operations
Courtney Weiss

Program Protection & Industrial Security
TBD

Quality
Dan Meyer (acting)

Strategic Business Development
Bob Mitchell

Systems' Integration

C4ISR Systems' Integration
Don DePree

Manned Ground Vehicle Systems' Integration
Dick Williams

Unmanned Air Vehicle Systems' Integration
Mark Franzblau

Unmanned Ground Vehicle Systems' Integration
Alan Walls

Lethality Systems' Integration
Charlie Williams

Soldier Systems' Integration
Charlie Williams

Increment 2 Concept& Technology Dev
Keith Taggart

* = Office of the Program Manager

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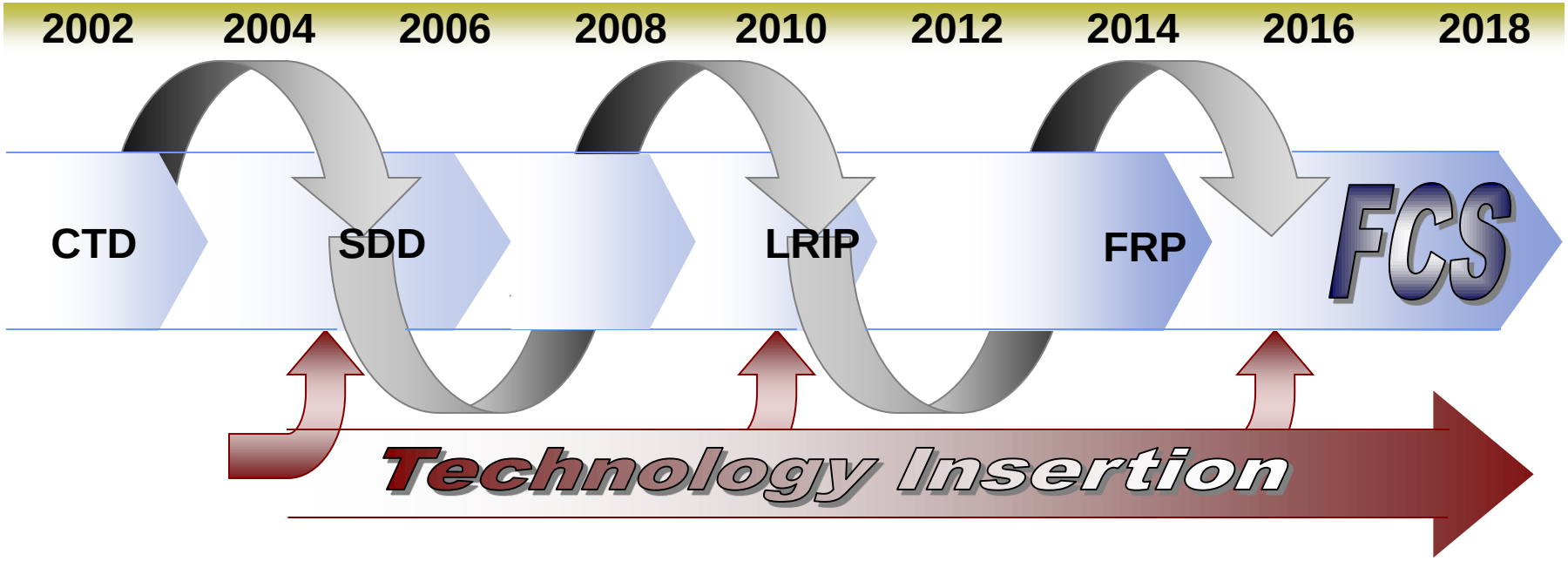
FCS Program Way Ahead

- Transition From CTD Into SDD With Best of Industry Partners
- Continue Capabilities Enhancement through Spiral Development / Technology Insertion
- Continue the Cultural Shift Through Revolutionary Acquisition and System-of-Systems Development Process



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